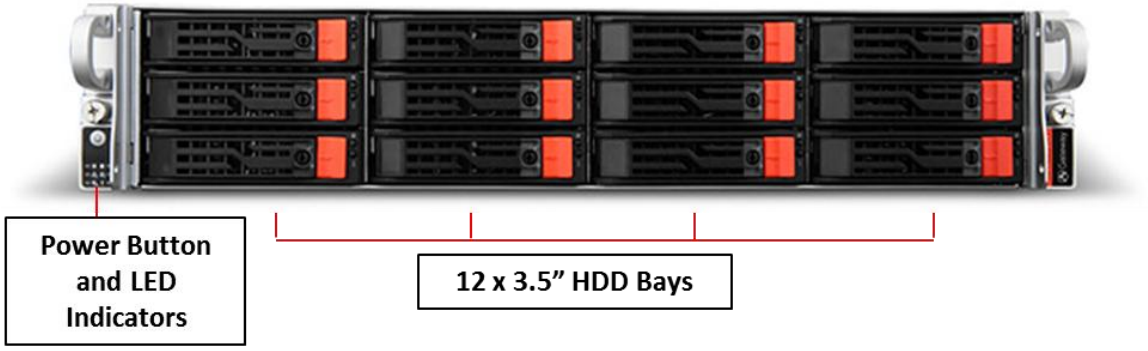
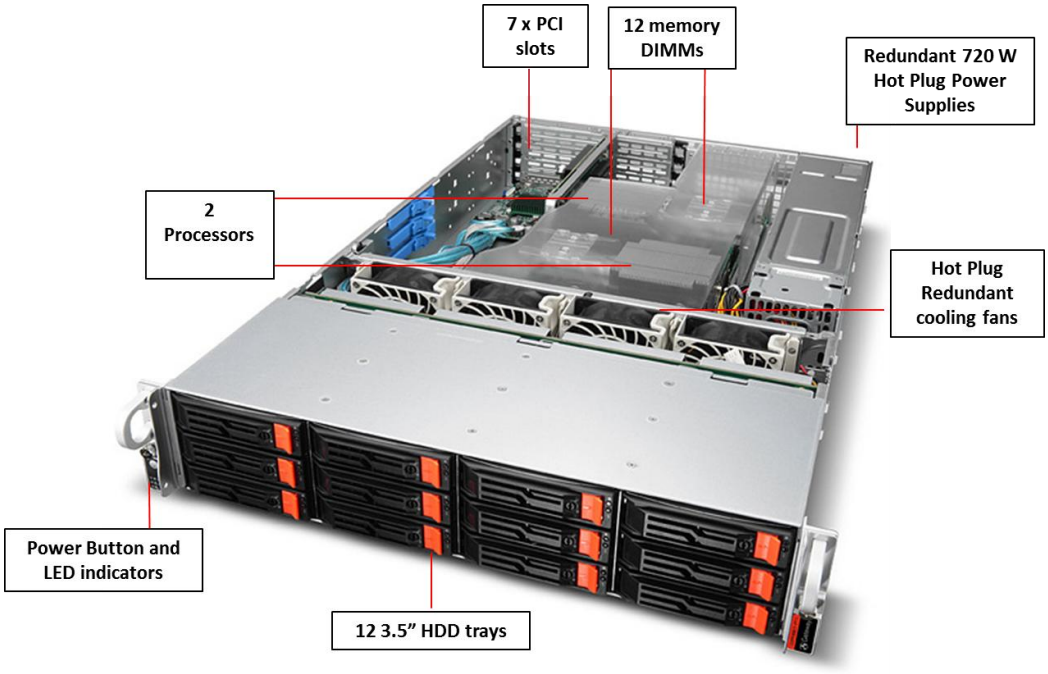
# AN1600 F1 Product Overview

The Acer AN1600 F1 storage system is a cost-effective storage solution, powered by Microsoft Windows Storage Server offering an easy way for storage centralization, file sharing, data protection, and remote access.

## Product Front view

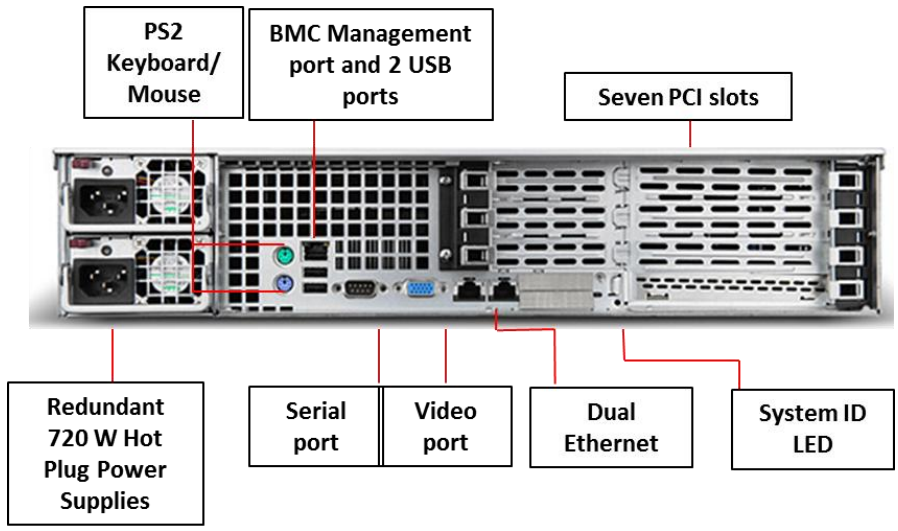



## Product inside view

1. 12 x ECC DDR3 1066/1333 MHz registered or unbuffered memory slots
2. 2 x Intel® Xeon® 5600 series processors supporting up to 6-cores per processor
3. 2 x 720 W 80 PLUS® gold-level efficient hot-swap power supplies (1+1 redundant)
4. Hot-plug redundant system cooling fans
5. Power button, System ID button, LED indicators (Power, HDD activity, LAN 1-2 status, system ID/status/fault)
6. Support for up to twelve 3.5” hot-plug SATA or SAS hard disk drives
7. 7 x PCI Express® slots with risers

### Product Rear View




1. PS2 keyboard connector
2. PS2 Mouse connector
3. 2 x USB 2.0 connectors
4. Management IPMI LAN port
5. COM (Serial) connector
6. Video port
7. 2 x Gigabit LAN connector
8. ID LED

## What's New

- Windows Storage Server 2008 R2
  - Friendly User Interface Customization
    - Standard-alone NAS OOBE
  - Single Instance Storage
    - Performance improvement
    - SCOM management pack support
  - iSCSI software version 3.3
    - Performance improvement
    - SCOM management pack support
  - Bitlocker
  - Branch-Cache-Hosted Cache support
  - Additional language support
- 16 port RAID card support

## Pre-configured Models

| | Processor | Memory | Type | HDD | RAID HBA[4] |
|---|---|---|---|---|---|
| 1 | 2 x E5620 | 8 GB | Stand-alone storage | 2 x 300 GB SAS | LSI MegaRAID 9240-4i |
| 2 | 2 x E5620 | 8 GB | Stand-alone storage | 12 x 300 GB SAS | LSI MegaRAID 9260-16i |
| 3 | 2 x E5620 | 8 GB | Stand-alone storage | 12 x 1 TB SATA | LSI MegaRAID 9260-16i |
| 4 | 2 x E5620 | 12 GB | Stand-alone storage | 12 x 600 GB SAS | LSI MegaRAID 9260-16i |
| 5 | 2 x E5620 | 12 GB | Stand-alone storage | 12 x 2 TB SATA | LSI MegaRAID 9260-16i |

## Features and Benefits

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| **Unified Storage File Server** | Centralized information management with Microsoft based storage operating system to manage, protect, and expand. |
| **Efficient Operation** | Works together with Acer Smart Setup and Acer Smart Manager for ease of installation and setup. Microsoft Management Console user interface from Windows storage operating system enables features such as iSCSI and SIS[1] to reduce maintenance and speed backup. |
| **Expansion as needed; built upon storage industry standards** | Leveraging industry standard SAS/SATA to allow cost effective expansion to external storage through fibre channel. Powered by the latest Intel processors to protect your investment and resources for years to come. |
| **Designed for budget conscious companies looking for enterprise class features** | Based on an established Server design using server processors, industry standard HDDs, interconnects, DDR3 memory, and hot-plug redundant power supplies; the AN1600 F1 is equipped with enterprise level features such as file de-duplication, snapshots, and distributed file system replication. |

## Standard Features

### Acer Smart Server Manager

- Offers 24-7 monitoring for system health and performance.
- Delivering proactive event management features including system event logging, event handling from e-mail and SNMP Trap (PET) alerting.
- Allowing remote control from KVM and Power control.
- Satisfying management in web-based UI, role-based administration, and automated management scripts.

### Acer Smart Console

- Web-based management utility to simplify system management with embedded iBMC
- System monitoring and alerting, event handling, remote power control and KVM-over-IP.
- Acer Smart Console is OS independent, and offers virtual media through floppy, ODD, and removable disk.
- Out-of-band (OOB) management regardless OS status.

### Acer Recovery Utility

- A friendly and an intuitive system recovery utility to return to its original factory state.
- Supports over twenty some different languages.
- Wizard step by step guiding through the complete recovery processes.

### Acer Resource Kit

- Comprehensive system information in one single disk including System drivers, LAN, RAID, and iSCSI Target Client utilities, and User Guide.

### GN1600 F1 features Windows Storage Server R2 Operating System

Microsoft® Windows® Storage Server 2008 R2 operating system provides file storage and print server capabilities for client and server computers in your network environment. Storage appliances running Windows Storage Server 2008 R2 can be used in failover clusters, providing high availability storage for application servers and file storage.

[1] SIS: Single Instance Storage can recover up to 35% of disk capacity by reducing the number of redundant files.

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| **Single Instance Storage (SIS) v2** | SIS reduces the amount of storage used by data by replacing multiple identical copies with logical links to a single source copy. |
| **File Server Optimization** | Windows Storage Server 2008 R2 is tuned to provide better performance in a file server role, realizing as much as an 8% performance gain in file system operations. |
| **Remote Administration in Heterogeneous Environments** | Remote administration of Windows Storage Server 2008 R2 appliances can be done from Internet Explorer using an ActiveX control, and from non-Microsoft browsers using a Java control. |
| **Print Services** | Windows Storage Server 2008 R2 offers performance enhancements for the Print Services role. |
| **Distributed File System (DFS) Namespace and Replication** | Windows Storage Server 2008 R2 can provide DFS support for file sharing for WANs and satellite offices |

## Microsoft iSCSI Software Target

Microsoft iSCSI Software Target provides centralized, software-based and hardware-independent iSCSI disk subsystems in storage area networks (SANs). You can use iSCSI Software Target, which includes a Microsoft Management Console (MMC) snap-in, to create iSCSI targets and iSCSI virtual disks. You can then use the Microsoft iSCSI Software Target console to manage all iSCSI targets and virtual disks created using iSCSI Software Target.

Microsoft iSCSI Software Target 3.2 provides the following features:

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| **Server Manager Integration** | Manage your Microsoft iSCSI Software Target from Server Manager. |
| **Improved CHAP Secret Storage** | Microsoft iSCSI Software Target 3.2 uses a more secure and customizable storage method for CHAP secrets. |
| **ERL0 Compliant** | Connection and session reinstatement is now fully ERL0 compliant. |

## Microsoft Management Console

Microsoft® Management Console (MMC) is an extensible common presentation service for management applications. MMC unifies and simplifies day-to-day system management tasks. It hosts tools and displays them as consoles. These tools, consisting of one or more applications, are built with modules called snap-ins. The snap-ins also can include additional extension snap-ins. Microsoft Management Console enables system administrators to create special tools to delegate specific administrative tasks to users or groups. Microsoft provides standard tools with the operating system that perform everyday administrative tasks that users need to accomplish.

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| **Task Orientation** | The tools being defined to work with MMC are task oriented in nature—they cater to the task being performed rather than merely displaying the raw objects that can be manipulated. Also, because administrators can customize their own tools, using pieces from various vendors, they can create tools that contain only the UI they need to complete their tasks. |
| **Integration** | The UI for all the management tasks an administrator must perform are collected into a single console. As new applications are added to a computer or network, their administration is integrated into the existing administration common console. |
| **Customization of Consoles** | Administrators can create custom consoles tailored to their particular management needs. This is useful in enterprise environments that divide administrator groups according to duties. For example, you can create a custom console for software installation and maintenance, another one for scripts |

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| | administrators, another one for security Group Policy, and so on. |
| **Delegation** | Administrators can easily modify existing tools to create new tools with reduced functionality and less complex views of the tool namespace, and then give these tools to others. A person who receives such a tool is presented with a simpler, more manageable view of the tasks they are being asked to perform. |
| **Overall Interface Simplification** | All tools built for MMC, from Microsoft or third-party software vendors, will have a similar appearance, making it easier for users to use all tools after learning one. Because you can mix and match tools from any vendor, you can use the best tool from each management product category. MMC also enables a single piece of software to provide functionality across the interface in a consistent manner. |
| **Extensibility** | Developers can extend the base functionality of MMC snap-ins by creating extension snap-ins. This allows software vendors to reuse Microsoft tools without writing a lot of code. Various mechanisms are available for extending snap-ins, including extending the namespace, context menus, toolbars, Property pages, and creating Wizard 97-style pages. |

# Product Specifications

## Processors and chipset

- 2 x Intel® Xeon® E5620 processors (2.4 GHz, 12 MB L3 cache, 5.86 GT/s, DDR3-1066, 80 W, HT)
- Intel® 5520 Chipset

## Memory

- Memory capacity:
  - Registered DIMM: 2, 4, 8 GB
  - Up to 32 GB supported by the OS.
    - Minimum: 6GB Required

## Network Controllers

- Integrated Intel® 82576EB dual-port Gigabit Ethernet controllers (2 ports total)

## Storage

- Hard disk form factor: 3.5”
- Type: SAS/ SATA with hot plug capability
- HDD Capacity (enterprise level):
  - 3.5” SAS HDD capacity: 300 GB, 450 GB, 600 GB
  - 3.5” SATA HDD capacity: 250 GB, 500 GB, 1TB, 2TB
- 3.5” Maximum capacity:
  - Up to 24 TB SATA HDD (2 TB 3.5" x 12 HDDs)
  - Up to 7.2 TB SAS (600 GB 3.5” x 12 HDDs)

## Storage controllers

- LSI SAS MegaRAID SAS PCIe 2.0 x16 9260-16i with 16-internal ports, 512 MB, supporting RAID 0/1/10/5/50/6/60 (default bundle in system)

## Expansion slots

- Two full height PCI-E 2.0 x8 slots (with x4 link; left)
- One full height PCI-E 2.0 x16 slot (with x8 link; left)
- Two low profile PCI-E 2.0 x8 slots (with x4 link; right)

- One low profile PCI-E 2.0 x8 slot (right)
- One Acer Flex I/O (PCI-E 2.0 x8) slot (left)

## Operating System

- Microsoft® Windows® Storage Server 2008 R2, Standard x64 edition

## Management

- Acer Smart Console
- Acer Smart Server Manager
- iBMC management controller, supporting base board management and KVM-over-IP
- LSI MSM (MegaRAID Storage Manager) on-line utility is the OS level utility for data volume RAID configuration
- LSI WebConsole utility is a ROM-based utility provided by HBA FW for data volume RAID configuration
- Windows Disk Management is OS built-in feature on Windows Storage Server 2008 R2
- Microsoft Windows Storage Server Administration Tools

### Deployment/serviceability

- BIOS Update Tool
- IPMI Firmware Update Tool

### Input/output interface

Front

- One Power/off button
- LED indicators: power, HDD activity, LAN port 1 through 2, and ID

Rear

- PS2 keyboard port
- PS2 mouse port
- Two USB 2.0 ports
- Two RJ-45 ports (dual Gigabit NIC) with activity and link indicators
- RJ-45 port (dedicated for management NIC) with activity and link indicators
- Serial (DB-9) port
- SVGA (DB-15) port
- ID LED

### Chassis / Form factor

- 2U rack optimized for up to 12 hot-plug SAS/SATA 3.5” HDDs

### Power supply

- 2 x 720 W 80 PLUS® Gold-level efficient hot-swap power supplies standard (1+1 redundant)

### Regulatory compliant standards

**EMC**

- FCC (Class A)
- CE (Class A)
- BSMI (Class A)

### Safety

- UL/cUL
- CB

## Technical Specifications

| | | |
|---|---|---|
| **Dimensions (with bezel)** | 438.4 mm (W) x 705 mm (D) x 88.1 mm (H) ( 17.3 x 27.8 x 3.5 inches) | |
| **Form factor** | 2U rack mount (with cable arms included) | |
| **Weight (approximate)** | Maximum (All component slots and sockets fully populated) | 38 kg (84 lbs.) |
| | Minimum (One HDD, power supply, and processor installed) | 27.5 kg (60.6 lbs.) |
| **BTU rating** | Maximum | 2456.64 BTU/hr. |
| **System inlet temperature** | Operating | 0° - 35°C (50° - 95°F) at sea level with an altitude derating of 1°C per 305 m (1.8°F per 1000 ft.) above sea level to a maximum of 3050 m (10,000 ft.) with no direct sustained sunlight. Maximum rate of change is 10°C/hr. (18°F/hr.). The upper limit depends on the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F). |
| | Non-operating | -40° - 70°C (-40° - 158°F) maximum rate of change is 20°C/hr. (36°F/hr.). |
| **Relative humidity (non-condensing)** | Operating | 8 - 90 % relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing |
| | Non-operating | 5 - 95 % relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing |
| **Emissions classification (EMC)** | FCC rating | Class A |
| | Normative standards | EN55022, EN 61000-3-2, EN 61000-3-3, CISPR 22 Class A |
| **Power supply** | Rated steady-state power | 720 W (at 100 VAC)<br>720 W (at 200 VAC) |
| | Maximum peak power | 720 W (at 100 VAC)<br>720 W (at 200 VAC) |

**Expansion slots**

The primary I/O bus for the main board is PCIe Gen2. The following table lists the characteristics of the PCI-E bus segments.

**PCI express Bus Segment Characteristics of PCI Express Topology**

| Expansion Slot # | # of slots | Type | Bus Width[1] | Vol. | Con. Width | Location | Length |
|---|---|---|---|---|---|---|---|
| PCIe | 2 | PCIe Gen 2 | x4 | 3.3V | x8 | Left | Full height |
| PCIe | 1 | PCIe Gen 2 | x8 | 3.3V | x16 | Left | Full height |
| PCIe | 2 | PCIe Gen 2 | x4 | 3.3V | x8 | Right | Low profile |
| PCIe | 1 | PCIe Gen 2 | x8 | 3.3V | x8 | Right | Low profile |
| Acer Flex I/O | 1 | PCIe Gen 2 | x8 | 3.3V | x8 | Left | |

***NOTE:***

*1. "Bus Width" refers to the number of physical electrical lanes running to a PCIe® connector.*

*2. Default bus assignment (in decimal). Inserting cards with PCI™ bridges may alter the actual bus assignment number.*

*3. Slots are enumerated differently based on the operating system. Microsoft® operating systems enumerate Device ID by bus starting from the lowest bus to the highest.*

| | | | |
|---|---|---|---|
| **Embedded dual-port Gigabit server adapter (Intel 82576EB) two port total** | **Network interface** | 10Base-T<br>100Base-TX<br>1000Base-TX | |
| | **Compatibility** | IEEE 802.3 10Base-T<br>IEEE 802.3ab 1000Base-T<br>IEEE 802.3u 100Base-TX | |
| | **Data transfer method** | Four lane (x4), 100 MHz PCI Express reference clock | |
| | **Network transfer rate** | 10Base-T (half-duplex) | 10 Mb/s |
| | | 10Base-T (full-duplex) | 20 Mb/s |
| | | 100Base-TX (half-duplex) | 100 Mb/s |
| | | 100Base-TX (full-duplex) | 200 Mb/s |
| | | 1000Base-TX (half- and full-duplex) | 2000 Mb/s |
| | **Connector** | RJ-45 | |
| | **Cable support** | CAT 5e wire | |
| | **Virtualization acceleration** | Intel I/O Acceleration Technology<br>Virtual Machine Device Queues (VMDq)<br>PCI-SIG SR-IOV implementation | |
| | **Manageability** | NC-SI SMBus, PXE, iSCSI boot | |

## Storage

| | | |
|---|---|---|
| **Maximum internal storage** | **Hard disk drive** | • Up to 12 hot-pluggable 3.5" SATA/SAS HDD |
| | **3.5” Maximum capacity** | • Up to 24 TB SATA<br>• Up to 7.2 TB SAS |

**Drive Support – Optical and Hard Disk Drive**

HDD Bays 0-11

**Optical Drive Support**

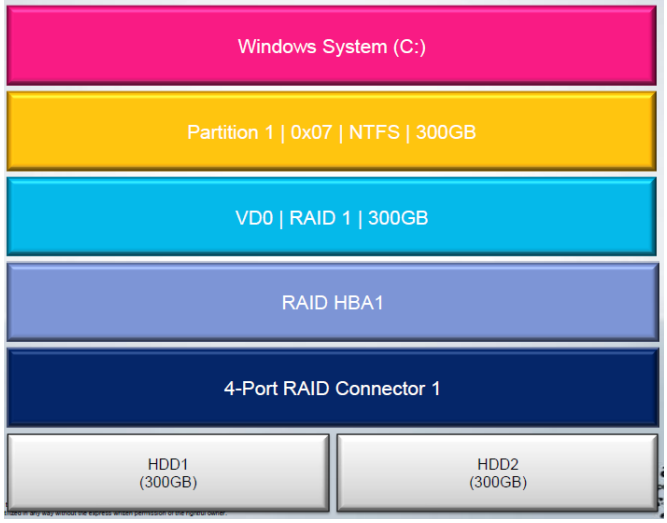
| Drive | Bay Supported | Required Controller |
|---|---|---|
| Optical Drive | External Only | USB 2.0 |

**Hard Disk Drive Support**

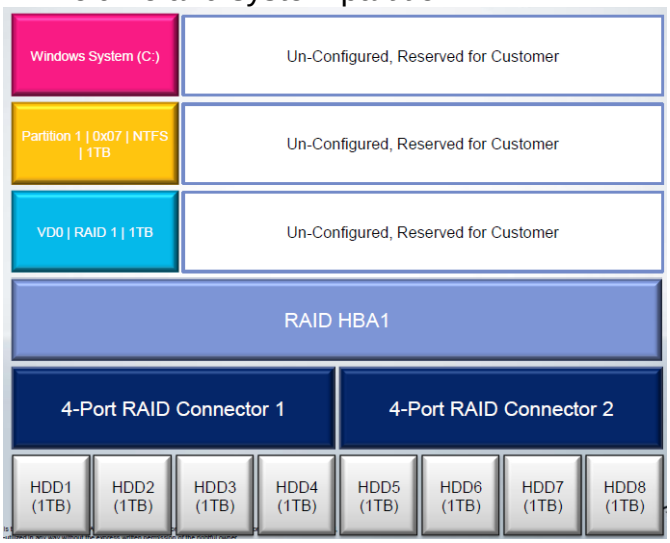
| Drive | Quantity Supported | Bay Supported | Required Controller |
|---|---|---|---|
| 3.5” SATA/SAS hard drive | Up to 12 | 0 - 11 | 16-port SAS RAID card for up to 12 SAS/SATA HDD’s |
| *standard on some models<br>**NOTE:** Transfer rates of drives are dependent on the maximum transfer rate supported by the host bus adapter (HBA) or controller. | | | |

## RAID Volume and Setup Layout

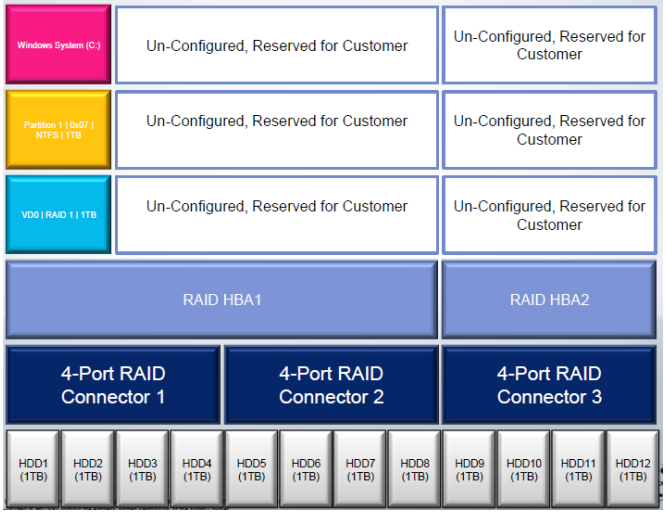
Default 2 HDDs RAID Volume and system partition




Default 8 HDDs RAID Volume and system partition




Default 12 HDDs RAID Volume and system partition



# Memory Support Specification

| | |
|---|---|
| Registered Type | DDR3 1066/ 1333 MHz |
| | Capacity: 2, 4, 8 GB |
| | Voltage: 1.5 V |
| | Maximum: 192 GB (16 GBx12 DIMMs) |
| Memory protection | ECC, Mirroring, Sparing, Lockstep Mode, x4/x8 SDDC |

Note: Mixing of registered memory and unbuffered ECC memory is not supported
16 GB memory modules available by special request only

## Memory Population

The systems have twelve DIMM slots. Each CPU controls six slots. The DIMM slots support DDR3-1333 registered ECC memory modules.

- Each CPU has three memory channels (channel 1, 2 and 3)
- Each channel has 2 slots

The socket furthest from the CPU is socket A **(P1DIMM1A, P1DIMM2A, P1DIMM3A in blue color)**, while the nearest is socket B **(P1DIMM1B, P1DIMM2B, P1DIMM3B in black)**. For all memory modes, socket A in each channel needs to be populated first. If socket A is empty, socket B cannot be used. It is recommended that the higher rank and largest capacity DIMM be installed in slot A.

For the system to function properly, DIMM modules must be installed following the slot sequence listed below. DIMM modules of the same type, size and manufacturer must be installed in the same DIMM colored slots.

- CPU 1 – populate DIMM slot P1DIMM1A first, followed by slots P1DIMM2A, P1DIMM3A, P1DIMM1B, P1DIMM2B, P1DIMM3B.
- CPU 2 – populate DIMM slot P2DIMM1A first, followed by slots P2DIMM2A, P2DIMM3A, P2DIMM1B, P2DIMM2B, P2DIMM3B.

**DIMM slot notation illustrated in table below:**

| **CPU1** (Rear CPU) | P1DIMM1B | P1DIMM1A | P1DIMM2B | P1DIMM2A | P1DIMM3B | P1DIMM3A |
|---|---|---|---|---|---|---|
| | **Black** | **Blue** | **Black** | **Blue** | **Black** | **Blue** |

| **CPU2** (Front CPU) | P2DIMM1B | P2DIMM1A | P2DIMM2B | P2DIMM2A | P2DIMM3B | P2DIMM3A |
|---|---|---|---|---|---|---|
| | **Black** | **Blue** | **Black** | **Blue** | **Black** | **Blue** |

**Independent mode (please refer to the User Guide for more information)**

- In this mode all memory is accessible and ECC protected

**Single-processor configuration**

| Total Memory | P1 1B | P1 1A | P1 2B | P1 2A | P1 3B | P1 3A |
|---|---|---|---|---|---|---|
| 2GB | | 2GB | | | | |
| 4GB | | 2GB | | 2GB | | |
| 6GB | | 2GB | | 2GB | | 2GB |
| 8GB | 2GB | 2GB | 2GB | 2GB | | |
| 12GB | 2GB | 2GB | 2GB | 2GB | 2GB | 2GB |
| 4GB | | 4GB | | | | |
| 8GB | | 4GB | | 4GB | | |
| 12GB | | 4GB | | 4GB | | 4GB |
| 16GB | 4GB | 4GB | 4GB | 4GB | | |
| 24GB | 4GB | 4GB | 4GB | 4GB | 4GB | 4GB |
| 8GB | | 8GB | | | | |
| 16GB | | 8GB | | 8GB | | |
| 24GB | | 8GB | | 8GB | | 8GB |
| 32GB | 8GB | 8GB | 8GB | 8GB | | |

**Dual-processor configuration**

| | CPU1 | | | | | | CPU2 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Memory | P1 1B | P1 1A | P1 2B | P1 2A | P1 3B | P1 3A | P2 1B | P2 1A | P2 2B | P2 2A | P2 3B | P2 3A |
| 4GB | | 2GB | | | | | | 2GB | | | | |
| 8GB | | 2GB | | 2GB | | | | 2GB | | 2GB | | |
| 12GB | | 2GB | | 2GB | | 2GB | | 2GB | | 2GB | | 2GB |
| 16GB | 2GB | 2GB | 2GB | 2GB | | | 2GB | 2GB | 2GB | 2GB | | |
| 18GB | 2GB | 2GB | 2GB | 2GB | 2GB | 2GB | | 2GB | | 2GB | | 2GB |
| 24GB | 2GB | 2GB | 2GB | 2GB | 2GB | 2GB | 2GB | 2GB | 2GB | 2GB | 2GB | 2GB |
| 8GB | | 4GB | | | | | | 4GB | | | | |
| 16GB | | 4GB | | 4GB | | | | 4GB | | 4GB | | |
| 24GB | | 4GB | | 4GB | | 4GB | | 4GB | | 4GB | | 4GB |
| 32GB | 4GB | 4GB | 4GB | 4GB | | | 4GB | 4GB | 4GB | 4GB | | |

**Mirroring mode:**

- In mirroring mode, the memory contains a primary image and a copy of the primary image therefore the effective size of memory is reduced by one half.
- Channel 3 has no function in these modes.
- Follow the population rules described in independent mode.
- Mirroring mode needs the channel 1 & channel 2 DIMMs to be identical. DIMM slot populations within a channel do not have to be identical but the same DIMM slot location across channel 1 and channel 2 must be the same. DIMM1A and DIMM2A should be the same type, size and manufacturer. DIMM1B and DIMM2B memory should be the same type, size and manufacturer. DIMM1C and DIMM2C memory should be the same type, size and manufacturer.
- Same rules apply to CPU2.
- Please refer to the User Guide for complete population rules for both single and dual processor configurations.

**Lockstep mode:**

- In Lockstep Channel Mode, each memory access is 128-bit data access that spans Channel 1 and Channel 2. This is done to support SDDC for DRAM devices with 8-bit wide data ports. The same address is used on both channels such that an address error on any channel is detectable.

- Lockstep Channel mode is the only RAS mode that supports x8 SDDC.
- Channel 3 has no function in these modes.
- Follow the population rules described in independent mode.
- Lockstep mode needs the channel 1 & channel 2 DIMMs to be identical. DIMM slot populations within a channel do not have to be identical but the same DIMM slot location across channel 1 and channel 2 must be the same. DIMM1A and DIMM2A should be the same type, size and manufacturer. DIMM1B and DIMM2B memory should be the same type, size and manufacturer. DIMM1C and DIMM2C memory should be the same type, size and manufacturer.
- Same rules apply to CPU2.
- Please refer to the User Guide for complete population rules for both single and dual processor configurations.

**Sparing mode:**

- In sparing mode, if the system detects degrading memory, the data in the failed channel will be copied to the spare channel. The failed channel is then isolated and the spare channel becomes active. Any uncorrectable error detected before the isolation will cause the system to stop normal operation.
- Channel 3 is the spare channel. Therefore, the effective size will be reduced by one-third.
- Follow the population rules described in independent mode.
- Sparing mode needs all three channels to utilize identical DIMMs. 1A, 2A and 3A should be the same type, size and manufacturer. 1B, 2B and 3B memory should be the same type, size and manufacturer. 1C, 2C and 3C memory should be the same type, size and manufacturer.
- Same rule is applied to CPU2.
- Please refer to the User Guide for complete population rules for both single and dual processor configurations.

## Memory Identification

Generally, there is memory information printed on the label of the DIMM, but different vendors may have different formats. For example:

4GB 2Rx4 PC3-10600R xx xx xxx

**1. Density**

- 2GB, 4GB, 8GB, 16GB
- Intel® Xeon® 5600 series processors support DIMMs organized by 1Gb, 2Gb or 4Gb DRAM chips

**2. Rank**

- 1R = Single Rank
- 2R = Dual Rank
- 4R = Quad Rank

**3. Bit Organization**

- This platform supports x4 and x8
- Note: It's not recommend to mix DIMMs with different bit organizations in one system

**4. Speed**

- PC3 – 6400 => DDR3- 800
- PC3 – 8500 => DDR3- 1066
- PC3 – 10600 => DDR3- 1333
- PC3 – 12800 => DDR3- 1600

## Power Supply Specification

| **720W Power Supply** | | | | | | | |
|---|---|---|---|---|---|---|---|
| Operational Input Voltage Range (Vrms) | 100 to 240 VAC | | | | | | |
| Frequency Range (Nominal) (Hz) | 50 / 60 | | | | | | |
| Nominal Input Voltage (Vrms) | **100** | **120** | **208** | **200** | **220** | **230** | **240** |
| Max. Rated Output Wattage | 720 | 720 | 720 | 720 | 720 | 720 | 720 |
| Nominal Input Current (A rms) | 8.46 | 6.97 | 3.80 | 3.87 | 3.74 | 3.5 | 3.29 |
| Max. Rated Input Wattage Rating (Watts) | 846.0 | 836.4 | 790.4 | 774.0 | 822.8 | 805.0 | 789.6 |
| Max. Rated VA (Volt-Amp) | 837.54 | 828.03 | 774.59 | 758.52 | 806.34 | 788.9 | 773.81 |
| Efficiency (%) at Max. Rated Output Wattage | 88.12 | 89.49 | 90.95 | 90.74 | 91.51 | 91.92 | 92.27 |
| Power Factor | 0.99 | 0.99 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Leakage Current (mA) | 0.17 | 0.19 | 0.29 | 0.31 | 0.35 | 0.37 | 0.41 |
| Max. Inrush Current (A peak) | 17.24 | 19.41 | 18.52 | 16.88 | 16.48 | 20.47 | 22.54 |
| Max. Inrush Current Duration (mS) | 4.62 | 4.58 | 4.61 | 4.62 | 4.64 | 4.63 | 4.64 |
| Max. British Thermal Unit Rating (BTU/hr.) | 2456.64 | 2456.64 | 2456.64 | 2456.64 | 2456.64 | 2456.64 | 2456.64 |

## Hardware Key Options

| | |
|---|---|
| **HDD** | • SAS 3.5”: 300 GB, 450 GB, 600 GB<br>• SATA 3.5”: 250 GB, 500 GB, 1TB, 2 TB |
| **Memory** | • DDR3 1333 MHz Registered ECC 2/ 4/ 8 GB |
| **SAS RAID** | • MegaRAID SAS 9240-4i, 4 internal ports, PCIe x8, supporting RAID 0/1/10/5<br>• MegaRAID SAS 9260-16i, 16 internal ports, 512 MB PCIe x8, supporting RAID 0/1/10/5/50/6/60<br>• LSI® BBU07/ Battery Backup Unit for MegaRAID SAS 9260-8i and 9260-16i |
| **Fibre Channel HBA** | • Qlogic SANblade® QLE2460 single port fibre channel to PCI express host bus adapter, 1 ch, 8 Gb FC HBA, PCIe x8, single LC port (std & low-profile bracket)<br>• Qlogic SANblade® QLE2462 dual ports fibre channel to PCI express host bus adapter, 2ch, 8 Gb FC HBA, PCIe x8, dual LC port (std & low-profile bracket) |
| **Rackmount kits** | • Sliding rails (Cable Management Arm option available) |

## Service and Support

Acer Servers offer a comprehensive service suite to take care of daily IT needs. Users can select the 3-year standard warranty or choose extended warranties and services[2].

The standard warranty for the AN1600 F1 includes 3 years Parts coverage with the first year including Labor and On-Site coverage.

Warranty repairs may be accomplished through the use of Customer Replacement Unit (CRU) parts. CRU parts include: Hot Plug Hard Drives and Hot Plug Power Supplies. These parts are designed for easy replacement without tools. Travel and labor charges may apply if customers decline to replace a CRU part.

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[2] Extension warranty services may vary by country. Please contact your Acer authorized reseller for more information.

| **Acer Standard Storage Models** | **Part Number** |
|---|---|
| **Acer AN1600 Models** | |
| Acer AN1600F1 Xeon E5620, 2x4GB DDR3 Reg, 2 x 300GB SAS, 4 Port 6G SAS RAID controller, 2x720W 80+ Gold PSU, 2x GBit LAN onboard, Acer Smart Manager, UPS Power Cable, no Mouse, no KB, Rail kit (2U) Included | TS.R760R.015 |
| Acer AN1600F1 Xeon E5620, 2x4GB DDR3 Reg, 12 x 300GB SAS, 16 Port 6G SAS RAID controller, 2x720W 80+ Gold PSU, 2x GBit LAN onboard, Acer Smart Manager, UPS Power Cable, no Mouse, no KB, Rail kit (2U) Included | TS.R760R.011 |
| Acer AN1600F1 Xeon E5620, 2x4GB DDR3 Reg, 12 x 1TB SATA, 16 Port 6G SAS RAID controller, 2x720W 80+ Gold PSU, 2x GBit LAN onboard, Acer Smart Manager, UPS Power Cable, no Mouse, no KB, Rail kit (2U) Included | TS.R760R.012 |
| Acer AN1600F1 Xeon E5620, 3x4GB DDR3 Reg, 12 x 600GB SAS, 16 Port 6G SAS RAID controller, 2x720W 80+ Gold PSU, 2x GBit LAN onboard, Acer Smart Manager, UPS Power Cable, no Mouse, no KB, Rail kit (2U) Included | TS.R760R.013 |
| Acer AN1600F1 Xeon E5620, 3x4GB DDR3 Reg, 12 x 2TB SAS, 16 Port 6G SAS RAID controller, 2x720W 80+ Gold PSU, 2x GBit LAN onboard, Acer Smart Manager, UPS Power Cable, no Mouse, no KB, Rail kit (2U) Included | TS.R760R.014 |
| **Acer Memory** | |
| **Note: please refer to "Memory Support" Section for details on configuring memory** | |
| **Acer Registered Memory** | |
| Acer 2GB DDR3-1333Registered Memory Kit (1 pc.) | TC.33100.029 |
| Acer 4GB DDR3-1333Registered Memory Kit (1 pc.) | TC.33100.031 |
| Acer 8GB DDR3-1333Registered Memory Kit (1 pc.) | TC.33100.042 |
| **Acer Storage** | |
| **Acer SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives** | |
| Acer 250GB 3Gb/s 7.2K 3.5-inch Enterprise SATA HDD Kit | TC.32700.068 |
| Acer 500GB 3Gb/s 7.2K 3.5-inch Enterprise SATA HDD Kit | TC.32700.066 |
| Acer 1TB 3Gb/s 7.2K 3.5-inch Enterprise SATA HDD Kit | TC.32700.064 |
| Acer 2TB 3Gb/s 7.2K 3.5-inch Enterprise SATA HDD Kit | TC.32700.062 |
| **Acer SAS Hot Plug LFF (3.5-inch) Enterprise Drives** | |
| Acer 300GB 6Gb/s 15K 3.5-inch Enterprise SAS HDD Kit | TC.32700.079 |
| Acer 450GB 6Gb/s 15K 3.5-inch Enterprise SAS HDD Kit | TC.32700.077 |
| Acer 600GB 6Gb/s 15K 3.5-inch Enterprise SAS HDD Kit | TC.32700.075 |
| **Acer SAS Storage Controllers** | |
| Acer 4-port 6Gb/s SAS RAID Adapter (w/ mSAS-mSAS cable) Kit | TC.32300.028 |
| Acer 8-port 6Gb/s SAS RAID Adapter (w/ mSAS-mSAS cable) Kit | TC.32300.034 |
| Acer 16-port 6Gb/s SAS RAID Adapter (w/ mSAS-mSAS cable) Kit | TC.32300.042 |
| Acer Battery Backup Kit for Cache module in 8port/16port SAS RAID Card | TC.34800.006 |
| **Acer Fibre Channel Storage Controllers** | |
| Acer 8Gb/s Single Port Fibre Channel HBA Kit | TC.32300.024 |
| Acer 8Gb/s Dual Port Fibre Channel HBA Kit | TC.32300.026 |
| Acer Cable Management Arm (2U/4U) Kit | TC.33700.021 |